

THE MAINE CLIMATE

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Introduction

The beat goes on for this winter. February was another cold month making the 2002-2003 one of the coldest we have seen over the past couple of decades. Yes, it has been awhile since we have seen a winter this cold, particularly with the high number of below-zero temperatures that continued to occur in February. The passage of some fairly decent storms with strong high pressure systems behind them made for some very windy days, thus producing wind chills this past month in the -20 to -30s on several mornings as well as throughout the day. The record setting snows at the beginning of February in The County made for a real winter wonderland this month and for the winter as a whole.

March Climate in Maine (TABLE 1)

The major event in March is the change from winter to spring with the vernal equinox occurring this year on Thursday, 20 March at 8:00 PM EST. Although this is a change in the solar season, Mainers are well aware of the fact that March really is still winter. Average temperatures for March range from 25°F in Caribou to 34°F in Portland with above freezing basically south of Bangor and below freezing north of Bangor. Average maximum temperatures remain below freezing for the first part of the month in Caribou, and average minimum temperatures remain below freezing across the state for the entire month. In most years, snow is still the dominant precipitation type in Caribou with an average of almost 20 inches (2.57 inches total precipitation) during the month. Portland receives 13.0 inches of snow in March with total precipitation equal to 4.1 inches of water equivalent. Overall, precipitation increases in March from north to south. Snowfall totals for the month are generally in the teens.

March can be a very stormy month as warm air from the south is creeping further north in the eastern United States. The marked contrast between the cold air in the north and the warmer, moist air to the south can fuel very large coastal storms in March. Significant cold outbreaks will often follow these storms with below 0°F temperatures still likely in northern Maine in the early part of the month. Areas like Portland only rarely see minimum temperatures getting below 0°F during March. Flooding can be a major problem this month as the snowpack starts to melt away, particularly if heavy rains occur on top of the snowpack.

TABLE 1

MEAN CLIMATIC CONDITIONS ACROSS THE STATE IN MARCH				
Date	NORTH Caribou	Bangor	Augusta	SOUTH Portland
<i>Temperature (°F)</i>				
1 March				
Daily High	28	35	36	39
Daily Low	8	16	19	20
Mean	18	26	27	29
15 March				
Daily High	34	40	41	41
Daily Low	14	22	23	25
Mean	24	31	32	33
31 March				
Daily High	40	46	47	47
Daily Low	22	28	29	30
Mean	31	37	38	39
<i>Monthly Summary</i>				
Mean Temperature (°F)	24.6	31.2	32.5	33.7
Heating Degree Days	1252	1048	1007	970
Cooling Degree Days	0	0	0	0
Mean Precipitation (in.)	2.57	3.44	3.64	4.14
Snowfall (in.)*	19.7	11.2*	14.2	13.0
Means based on 30-year period from 1971 to 2000. Heating and Cooling Degree Days from a base of 65°F. *Bangor average snowfall may be low due to possible data collection problems in the late 1990s.				

Looking Ahead

[Remember: Use of the term “Climatological Conditions” means that there is an equal chance (33%) of above average, of average, or of below average temperature or precipitation]

Temperature: Over the next two weeks, temperatures are expected to be under climatological conditions. However, for the entire month of March there is a 38% chance that temperatures could be above average-something different for this winter, although many forecasts were for a warmer than average winter. Temperatures are expected to fall under climatological conditions over the next three months as a whole (March, April, May).

Precipitation: There is a 40% chance that precipitation amounts will be above average over the next two weeks. This changes to climatological conditions for all of March and then to a 43% chance of below average precipitation during the next three months (March, April, May).

Past March Events

10 March 1819: A one-day total of 30 inches of snow fell this day in Brunswick. This was the largest one-day total recorded at Bowdoin College from 1807 to 1859.

14 March 1936: Highest recorded flood level for the Kennebec River at Hallowell. Part of the All New England flood of 1936 that resulted from several large rainstorms on a very deep snowpack.

February 2003 in Maine: REMAINS COLD, BUT WAS WET AND SNOWY

Temperature (TABLE 2; FIGURES 1a-1c):

The cold temperatures of January continued in February as overall many places around the state recorded average temperatures that were 4-7°F below average. In mid-month, maximum temperatures failed to get above 0°F in Caribou, single digits in Bangor, and 20°F in Portland. Minimum temperatures reached 0°F or below on 18 days in Caribou, 17 days in Bangor and 9 days in Portland. Interestingly, there were only two days at the beginning of the month in Portland out of the three sites, when temperatures failed to drop below freezing. At least half of the days in the month, at most locations, had mean daily temperatures that were between 10 and 30 degrees below average.

TABLE 2

CLIMATIC CONDITIONS ACROSS THE STATE: FEBRUARY 2003						
	<i>Temperature (°F)</i>		<i>Precipitation (inches)</i>		<i>Snowfall (inches)</i>	
	Mean	Departure from Norm	Total	Departure from Norm	Total	Departure from Norm
Caribou	7.3	-5.7	3.78	+1.72	39.1	+18.4
Bangor	14.8	-6.4	2.65	+0.11	17.1	+2.0
Augusta	17.7	-5.4	1.47	-1.07	Not yet available	

Portland	20.2	-4.6	3.51	+0.37	16.8	+4.0
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Departure from Norm based on 30-year record from 1971-2000. All numbers are *unofficial*.

FIGURE 1a

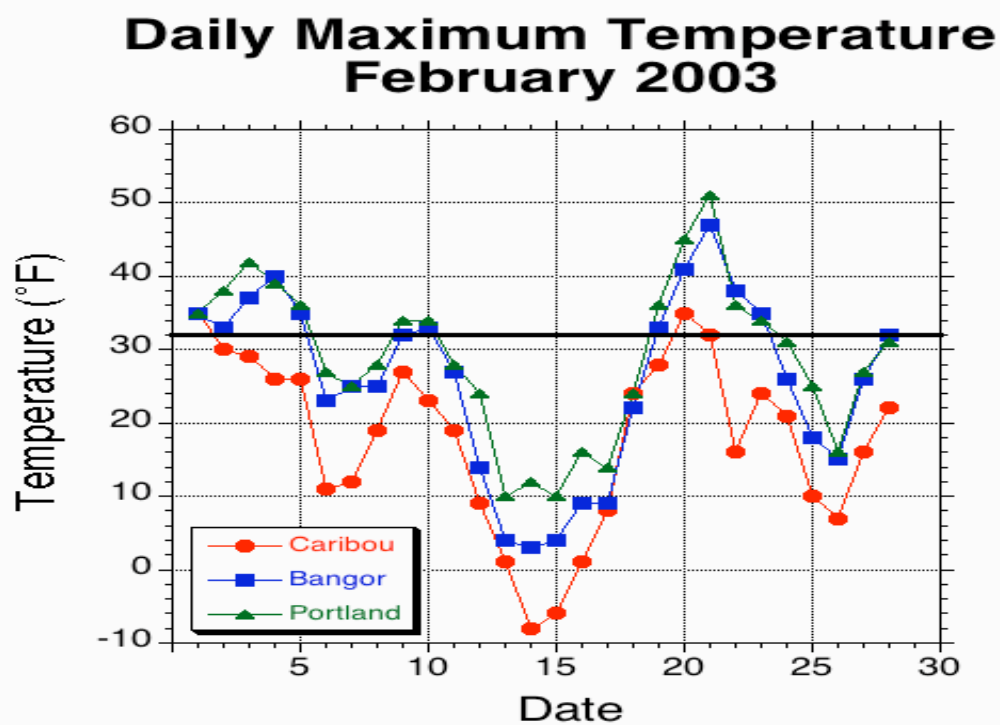


FIGURE 1b

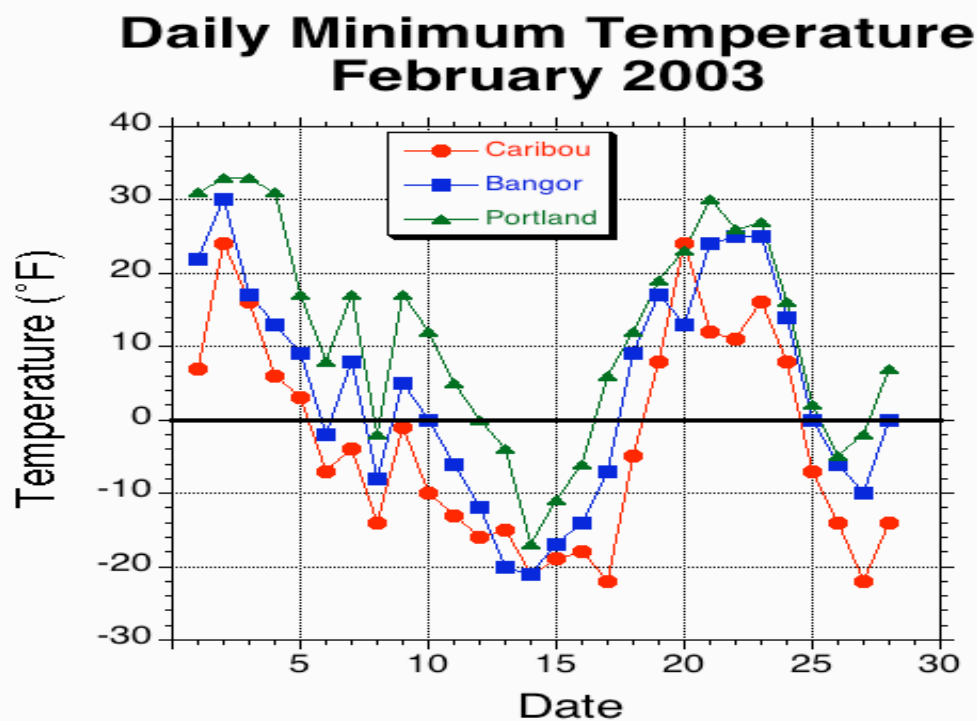
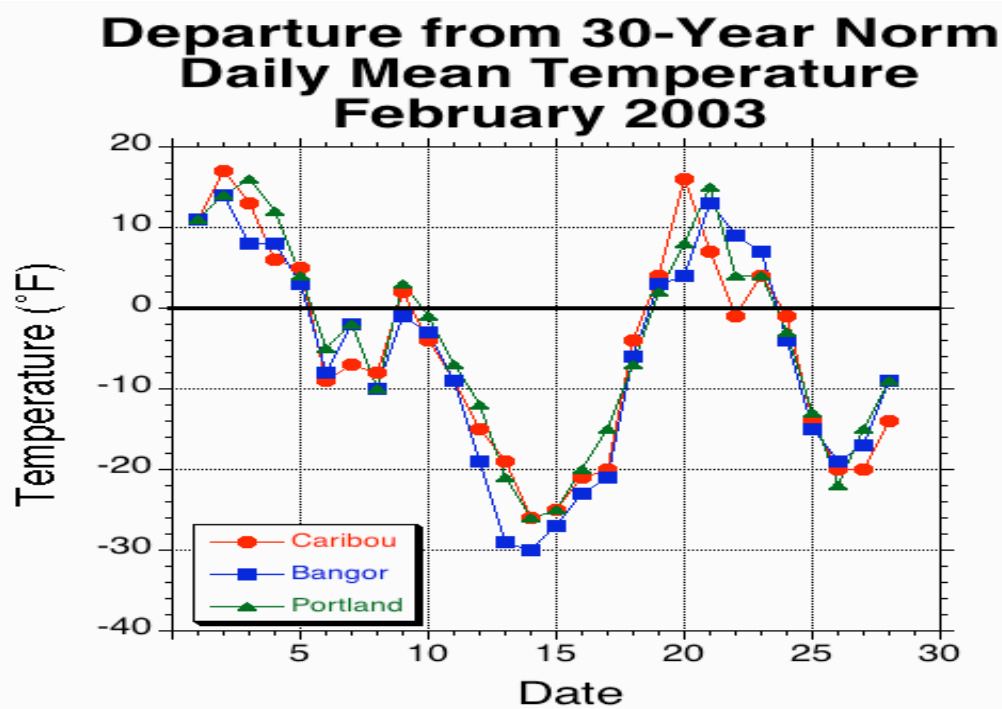


FIGURE 1c



Precipitation (FIGURES 2a-2b, 3a-3b):

Both total precipitation and snowfall amounts were above average for most parts of the state during February. Augusta seems to be one area that remained below average, as did Sebec Lake, according to Bill Larrabee. The most memorable precipitation event during the month was the record-setting snows of 2-5 February in The County. Caribou reported about 30 inches total for those three days, with 21 inches falling on the 2nd. Most of the other events during the month were moderate, but they added-up to above average amounts for the month. Larry Dwight also measured around 21 inches of snow for the month in Kennebunk. He also noted that frozen salt water on the beach is over 3-4 feet broad in places and 8-12 inches high!

FIGURE 2a

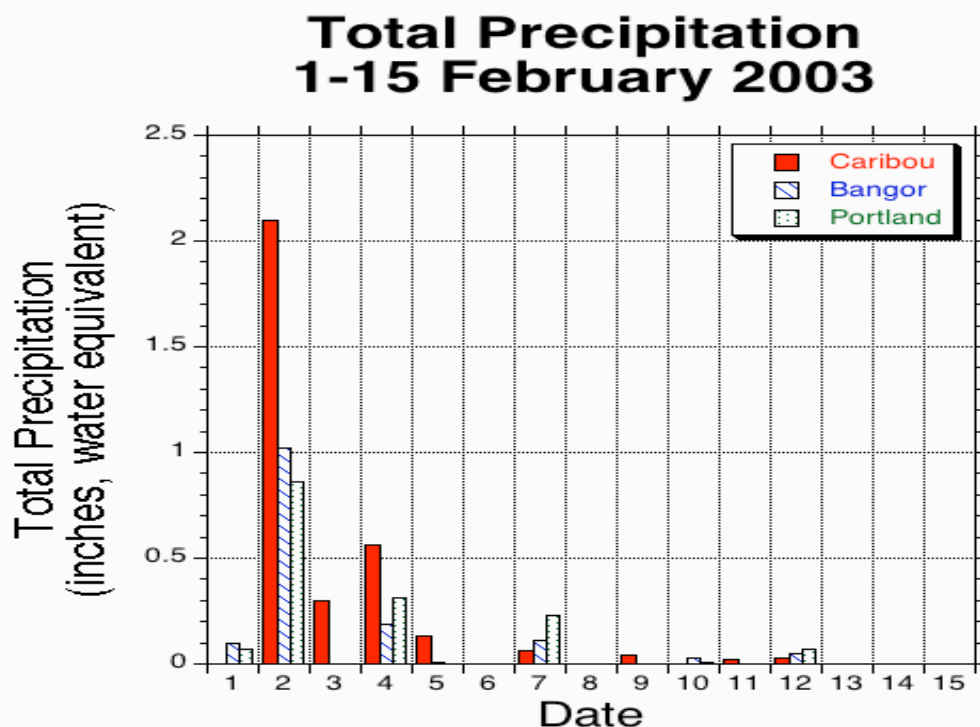


FIGURE 2b

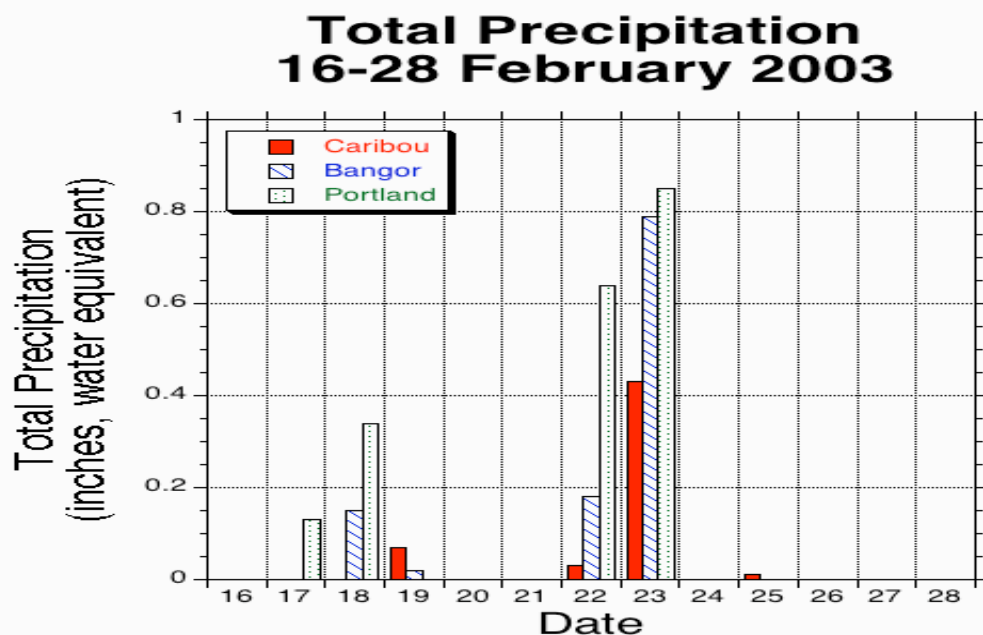


FIGURE 3a

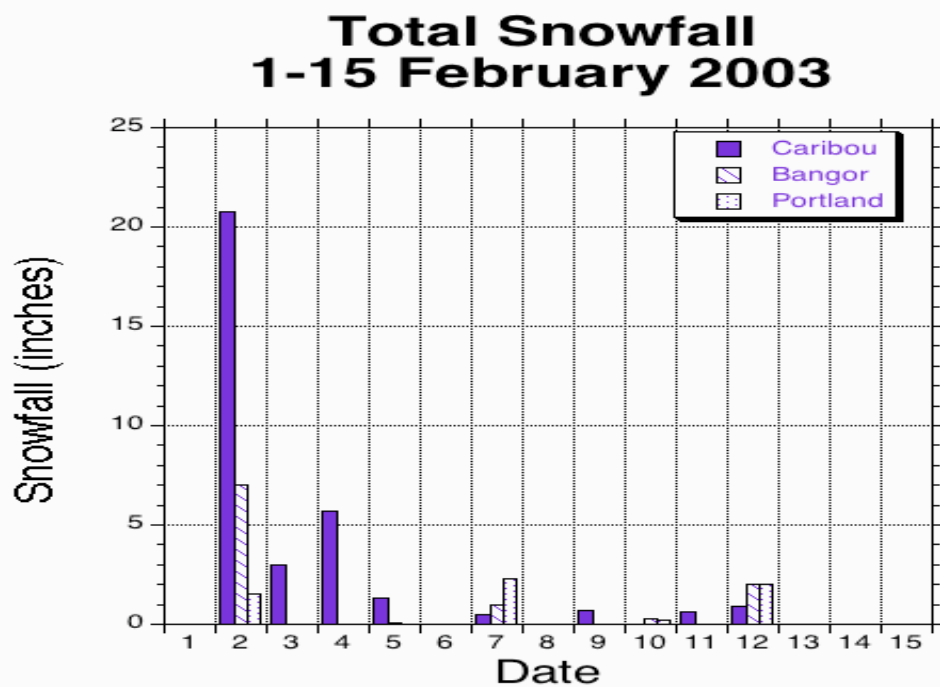
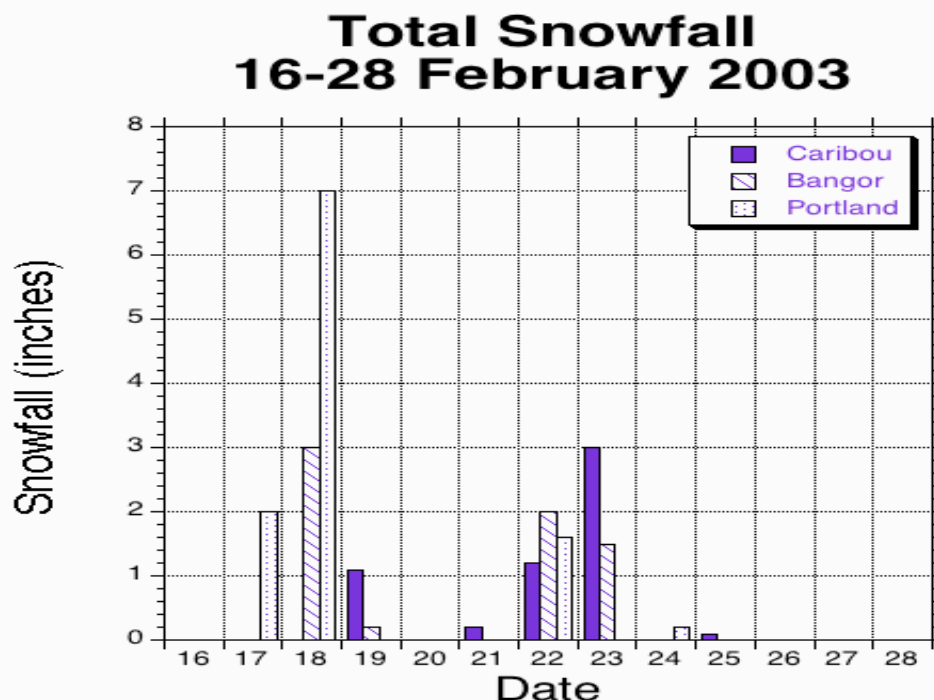


FIGURE 3b

NOTE: PRECIPITATION AND SNOWFALL PLOTS DISPLAY “TRACE” AS 0.001 INCHES. VERTICAL SCALES ON PRECIPITATION FIGURES ARE NOT THE SAME FROM FIGURE TO FIGURE. ALL DATA SHOWN ON PLOTS ARE UNOFFICIAL

Winter (DJF) of 2002-2003: Cold and Dry

Although winter extends into April here in Maine (and sometimes May), winter is designated as December, January and February for the purpose of determining climatological averages. The 2002-2003 winter will go down as being 3-5°F colder than average with precipitation amounts being about 1 to possibly 4 inches below average. Most of that deficit was from the very dry January, which ended up being tied for the 3rd driest January on record (since 1895). Snowfall totals were close to average with most areas being a few inches above average. Maine’s winter certainly differed from the predicted winter conditions made last fall. Most models suggested that this would be a warm winter with precipitation amounts falling under climatological conditions. It is likely that most models relied too heavily on the influence of the El Niño. That event fizzled very quickly and it did not reach a position within the Pacific Ocean where it could exert an overwhelming influence on us here in Maine.

TABLE 3

SEASON TOTALS – WINTER (DJF) 2002-2003						
	<i>Temperature (°F)</i>		<i>Precipitation (inches)</i>		<i>Snowfall (inches)#</i>	
	Mean	Departure from Norm	Total	Departure from Norm	Total	Departure from Norm
Caribou	10.1	-2.9	7.40	-0.82	90.3	+4.6
Bangor	15.8	-5.4	7.53	-1.68	50.2	-2.0*
Augusta	18.4	-4.3	4.90	-4.38	Not yet available	
Portland	20.8	-3.9	9.16	-2.31	57.0	+6.9
#Snowfall totals are for the entire snow season (1 July 2002– 30 June 2003). *Bangor average snowfall may be low due to possible data collection problems in the late 1990s. All numbers are <i>unofficial</i> .						
YEAR-TO-DATE – 2003						
	<i>Temperature (°F)</i>		<i>Precipitation (inches)</i>		<i>Snowfall (inches)</i>	
	Mean	Departure from Norm	Total	Departure from Norm	Total	Departure from Norm
Caribou	6.45	-4.1	4.47	-0.56	54.3	+6.6
Bangor	12.9	-6.8	3.59	-2.29	29.9	-3.9*
Augusta	15.8	-5.5	1.81	-3.97	Not yet available	
Portland	18.4	-4.9	4.65	-2.58	35.5	+2.2
Departure from Norm based on 30-year record from 1971-2000. *Bangor average snowfall may be low due to possible data collection problems in the late 1990s. All numbers are <i>unofficial</i> .						

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